

**Work Order ID 145531**

Friday, May 06, 2016 9:08:17 AM

**\*145531\***

Page 1

Item ID: D412-742-043 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.  
Start Date: 4/25/2016 Start Qty: 1.00 **\*1\*** Cust Item ID:  
Required Date: 5/5/2016 Req'd Qty: 1.00 **\*1\*** Customer:  
Reference:

Approvals: Process Plan: gem Date: 16/05/09 Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
|--------------------------------|--------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|

| Draw Nbr | Revision Nbr |
|----------|--------------|
| D3391    | J            |

|     |                  |      |
|-----|------------------|------|
| 100 | Document Control | 0.00 |
|-----|------------------|------|

**\*100\***

DC

Doc.Control -USB or Paperwork

DOCUMENT CONTROL

Memo

0.00

If D412-742-043 is a W/O on it's own,  
Photocopy bluefile and create labels per PPP D412-742-043 CHG007

N/A **DAS**  
**21**  
**9-89** **AUG 30 2016**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

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| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                                            |  |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | Step #:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  | <b>MRB (QSI042) Approval</b><br><br>Completed By _____<br><br>Lead hand / Supervisor Approval Verification _____<br><br>QC / QA Coordinator Approval _____ |  |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |                                                                                                                                                            |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                            |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                            |  |  |
| <b>Root Cause</b><br><div style="display: flex;"> <div style="width: 50%;">           Environment <input type="checkbox"/><br/>           Design <input type="checkbox"/><br/>           Doc/Data <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Pre <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Internal Transport <input type="checkbox"/><br/>           Tribal Knowledge <input type="checkbox"/><br/>           LOA <input type="checkbox"/><br/>           Substation <input type="checkbox"/><br/>           Past Expiry Date <input type="checkbox"/><br/>           Misidentified <input type="checkbox"/> </div> <div style="width: 50%;">           No Re-verification <input type="checkbox"/><br/>           Operator <input type="checkbox"/><br/>           Offset/Setup <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Training <input type="checkbox"/><br/>           Use for Testing <input type="checkbox"/><br/>           Poor Information <input type="checkbox"/><br/>           Rushing <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Past Due <input type="checkbox"/> </div> </div> |  | <b>FAULT CATEGORY</b><br><div style="display: flex;"> <div style="width: 33%;">           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Centre Not Concentric <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>           Cuffs <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Heat Treat <input type="checkbox"/><br/>           Wave/Twist in Tube <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/> </div> <div style="width: 33%;">           Temperature/Cure <input type="checkbox"/><br/>           Set-up <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Inspection Incomplete/Unqualified <input type="checkbox"/><br/>           Contamination <input type="checkbox"/><br/>           Countersink <input type="checkbox"/><br/>           Cut Too Short <input type="checkbox"/><br/>           Instructions Incomplete/Unclear <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/> </div> <div style="width: 33%;">           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set <input type="checkbox"/><br/>           Mislabeled <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/> </div> <div style="width: 33%;">           Positioned Wrong <input type="checkbox"/><br/>           Outside Dimensions <input type="checkbox"/><br/>           Over/Under tolerance <input type="checkbox"/><br/>           Part Incorrect <input type="checkbox"/><br/>           Part Lost/Missing <input type="checkbox"/><br/>           Part Moved <input type="checkbox"/><br/>           Drawing <input type="checkbox"/><br/>           Finish <input type="checkbox"/><br/>           Misread <input type="checkbox"/><br/>           Turning Sequence <input type="checkbox"/> </div> </div> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                            |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                            |  |  |

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Page 2

Item ID: D412-742-043 Accept **\*N900040100\*** Setup Start **\*NS1\***  
Revision ID: Stop **\*NS2\***  
Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.  
Start Date: 4/25/2016 Start Qty: 1.00 **\*1\*** Cust Item ID:  
Required Date: 5/5/2016 Req'd Qty: 1.00 **\*1\*** Customer:  
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Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_ Run Start **\*NR1\***  
QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_ Stop **\*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------|
| 110                            | HandFinishing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | 0.00                 |         |        |              |               |               |                  |                |
| <b>*110*</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |         |        |              |               |               |                  |                |
| HandFinish                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1.89                 |         |        |              |               |               |                  |                |
| Hand Finishing                 | <b>Memo</b><br>1-Install tubes together and seal them all the way around using Sikaflex 241/291. Ensure tube ends line-up with saddle holes for proper alignment. using 7/16" "T" Pins.<br>A/RSikaflex-241/-291 <u>M135376</u><br>Expiry date: <u>16/12</u><br><br>2-Install wearplates as per Dwg D3391. Ensure that plastic washers are against wearplate, then topped with the SS washer. Seal all bolts with sikaflex exept ones with inserts on inside of tube ,hand tighten only bolts with no sikaflex.<br><br>A/RSikaflex-241/-291 <u>M135376</u><br>Expiry date: <u>16/12</u><br><br>3-Remove "T" pins once sikaflex is dry.<br><br>4-Coat all exposed hardware with LPS Procyon. Remove any excess off with MEK degreaser.<br>A/RLPS Procyon <u>M133690</u> |                      |         |        |              |               |               |                  |                |

12 9 16/08/18

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

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| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                                            |  |  |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                            |  |  |
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**Item ID:** D412-742-043**Accept****\*N900040100\*****Setup Start \*NS1\*****Revision ID:****Stop \*NS2\*****Item Name:** Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.**Start Date:** 4/25/2016 **Start Qty:** 1.00 **\*1\*****Cust Item ID:****Required Date:** 5/5/2016 **Req'd Qty:** 1.00 **\*1\*****Customer:****Reference:****Approvals:** **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_**Run Start \*NR1\*****QC:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **SPC (Y/N):** \_\_\_\_\_ **Date:** \_\_\_\_\_**Stop \*NR2\***

| Sequence ID/<br>Work Center ID | Operation<br>Description                                                                    | Set Up/<br>Run Hours | Tool ID | Tool # | Plan<br>Code | Accept<br>Qty | Reject<br>Qty | Reject<br>Number | Insp.<br>Stamp                   |
|--------------------------------|---------------------------------------------------------------------------------------------|----------------------|---------|--------|--------------|---------------|---------------|------------------|----------------------------------|
| 120                            | QC5- Inspect part completeness to step on W/O                                               | 0.00                 |         |        |              |               |               |                  |                                  |
| <b>*120*</b>                   |                                                                                             |                      |         |        |              |               |               |                  |                                  |
| QC                             | <b>Memo</b>                                                                                 | 0.02                 |         |        |              |               |               |                  | DAS<br>38<br>9-89<br>AUG 18 2016 |
| Quality Control                |                                                                                             |                      |         |        |              |               |               |                  |                                  |
| 130                            | Packaging                                                                                   | 0.00                 |         |        |              |               |               |                  |                                  |
| <b>*130*</b>                   |                                                                                             |                      |         |        |              |               |               |                  |                                  |
| Packaging                      | <b>Memo</b>                                                                                 | 0.00                 |         |        |              |               |               |                  | DAS<br>27<br>9-89<br>AUG 29 2016 |
| Packaging                      | Identify and pack for shipping as per PPP D412-742-043<br>Location: _____<br>PPP Rev: _____ |                      |         |        |              |               |               |                  |                                  |
|                                |                                                                                             |                      |         |        |              |               |               |                  | PPP147869                        |
| 140                            | QC21- Final Inspection - Work Order Release                                                 | 0.00                 |         |        |              |               |               |                  |                                  |
| <b>*140*</b>                   |                                                                                             |                      |         |        |              |               |               |                  |                                  |
| QC                             | <b>Memo</b>                                                                                 | 0.10                 |         |        |              |               |               |                  | DAS<br>21<br>9-89<br>AUG 30 2016 |
| Quality Control                |                                                                                             |                      |         |        |              |               |               |                  |                                  |

AUG 30 2016

DQA: \_\_\_\_\_ Date: \_\_\_\_\_

**WORK ORDER NON-CONFORMANCE / UPDATE**

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                            |  |  |
|--------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |                                                | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |                                                            | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                               |  |                                                                                                                                                            |  |  |
| Date :                                                       |                                                | Step #:                                                                                                                                                                            |                                                            | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  | <b>MRB (QSI042) Approval</b><br><br>Completed By _____<br><br>Lead hand / Supervisor Approval Verification _____<br><br>QC / QA Coordinator Approval _____ |  |  |
| Description Work Order Deviation                             |                                                |                                                                                                                                                                                    |                                                            | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                               |  |                                                                                                                                                            |  |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                            |  |  |
|                                                              |                                                |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                            |  |  |
| Root Cause                                                   |                                                | FAULT CATEGORY                                                                                                                                                                     |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                            |  |  |
| Environment <input type="checkbox"/>                         | No Re-verification <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>                                                                                                                                           | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Positioned Wrong <input type="checkbox"/>     |  |                                                                                                                                                            |  |  |
| Design <input type="checkbox"/>                              | Operator <input type="checkbox"/>              | Bending <input type="checkbox"/>                                                                                                                                                   | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Outside Dimensions <input type="checkbox"/>   |  |                                                                                                                                                            |  |  |
| Doc/Data <input type="checkbox"/>                            | Offset/Setup <input type="checkbox"/>          | Centre Not Concentric <input type="checkbox"/>                                                                                                                                     | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Over/Under tolerance <input type="checkbox"/> |  |                                                                                                                                                            |  |  |
| Equip/Tooling <input type="checkbox"/>                       | Supplier <input type="checkbox"/>              | Cracks <input type="checkbox"/>                                                                                                                                                    | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Part Incorrect <input type="checkbox"/>       |  |                                                                                                                                                            |  |  |
| Handling/Pre <input type="checkbox"/>                        | Training <input type="checkbox"/>              | Crimp/Kink/Ripple/Wave <input type="checkbox"/>                                                                                                                                    | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Part Lost/Missing <input type="checkbox"/>    |  |                                                                                                                                                            |  |  |
| Material <input type="checkbox"/>                            | Use for Testing <input type="checkbox"/>       | Cuffs <input type="checkbox"/>                                                                                                                                                     | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Part Moved <input type="checkbox"/>           |  |                                                                                                                                                            |  |  |
| Internal Transport <input type="checkbox"/>                  | Poor Information <input type="checkbox"/>      | Crushing <input type="checkbox"/>                                                                                                                                                  | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Drawing <input type="checkbox"/>              |  |                                                                                                                                                            |  |  |
| Tribal Knowledge <input type="checkbox"/>                    | Rushing <input type="checkbox"/>               | Heat Treat <input type="checkbox"/>                                                                                                                                                | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Finish <input type="checkbox"/>               |  |                                                                                                                                                            |  |  |
| LOA <input type="checkbox"/>                                 | Product Improvement <input type="checkbox"/>   | Wave/Twist in Tube <input type="checkbox"/>                                                                                                                                        | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Misread <input type="checkbox"/>              |  |                                                                                                                                                            |  |  |
| Substation <input type="checkbox"/>                          | Process Improvement <input type="checkbox"/>   | Marks/Chatter <input type="checkbox"/>                                                                                                                                             | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Turning Sequence <input type="checkbox"/>     |  |                                                                                                                                                            |  |  |
| Past Expiry Date <input type="checkbox"/>                    | Manufacturing Process <input type="checkbox"/> | OTHER : _____                                                                                                                                                                      |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                            |  |  |
| Misidentified <input type="checkbox"/>                       | Past Due <input type="checkbox"/>              |                                                                                                                                                                                    |                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                               |  |                                                                                                                                                            |  |  |

# Picklist Print

Friday, May 06, 2016 9:08:16 AM

Page 1

Work Order ID: 145531

**\*145531\***

Parent Item: D412-742-043

**\*D412-742-043\***

Parent Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.

Start Date: 4/25/2016

Required Date: 5/5/2016

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev A 05.10.13 New Issue KJ/JLM  
 IPP Rev 06.02.13 ECN 773 dwg @ rev.D EC  
 IPP Rev:C 07-05-28 As per Rev F JLM  
 IPP Rev:D 07-12-04 ECN 1072 DD verified by:JLM  
 IPP Rev:E 08-09-08 ecn 08-510 DD verified by:EC IPP Rev:F  
 11.11.01 as per DSI9517 REV.B DD verified by:EC IPP REV:G 16.05.02  
 AS PER DWG REV.J DD VERF:JLM

| Component Item ID/<br>Item Name | Replacement<br>Item ID | Mfg/<br>Purch | Bin<br>Item | Primary<br>Location | Last<br>Location | Route<br>Seq ID | Unit of<br>Measure | Qty on<br>Hand | Qty per Kit | Total<br>Qty | Qty<br>Issued | Date<br>Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|

|                    |  |              |    |  |  |     |      |        |           |   |  |  |  |
|--------------------|--|--------------|----|--|--|-----|------|--------|-----------|---|--|--|--|
| D3391-021          |  | Manufactured | No |  |  | 110 | Each | 0.0000 | 1         | 1 |  |  |  |
| <b>*D3391-021*</b> |  |              |    |  |  |     |      |        | <b>**</b> |   |  |  |  |

Fwd Tube Assembly

|                        |  |           |    |  |  |     |      |          |           |    |  |  |  |
|------------------------|--|-----------|----|--|--|-----|------|----------|-----------|----|--|--|--|
| NAS1149C0532R          |  | Purchased | No |  |  | 110 | Each | 241.0000 | 10        | 10 |  |  |  |
| <b>*NAS1149C0532R*</b> |  |           |    |  |  |     |      |          | <b>**</b> |    |  |  |  |

WASHER

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| GA       | 60      |          |
| 116513   | 60      |          |
| ST266    | 181     | 11135056 |
| m133031  | 177     |          |
| m134181  | 4       |          |

|                    |  |              |    |  |  |     |      |        |           |   |  |  |  |
|--------------------|--|--------------|----|--|--|-----|------|--------|-----------|---|--|--|--|
| D3391-023          |  | Manufactured | No |  |  | 110 | Each | 0.0000 | 1         | 1 |  |  |  |
| <b>*D3391-023*</b> |  |              |    |  |  |     |      |        | <b>**</b> |   |  |  |  |

Mid Tube Assembly

|                    |  |              |    |  |  |     |      |        |           |   |  |  |  |
|--------------------|--|--------------|----|--|--|-----|------|--------|-----------|---|--|--|--|
| D3391-025          |  | Manufactured | No |  |  | 110 | Each | 1.0000 | 1         | 1 |  |  |  |
| <b>*D3391-025*</b> |  |              |    |  |  |     |      |        | <b>**</b> |   |  |  |  |

Aft Tube Assembly

| Location | Loc Qty | Loc Code |
|----------|---------|----------|
| FG       | 1       |          |
| 112712   | 1       |          |



DQA: \_\_\_\_\_ Date: \_\_\_\_\_

## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |                                                                                                                                                            |  |
|--------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |  |                                                                                                                                                            |  |
| Date :                                                       |  | Step #:                                                                                                                                                                            |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  | <b>MRB (QSI042) Approval</b><br><br>Completed By _____<br><br>Lead hand / Supervisor Approval Verification _____<br><br>QC / QA Coordinator Approval _____ |  |
| Description Work Order Deviation                             |  |                                                                                                                                                                                    |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |  |                                                                                                                                                            |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |  |                                                                                                                                                            |  |

| Root Cause                            |                                     |                                             |                                           | FAULT CATEGORY                                  |                                                            |                                                |                                               |
|---------------------------------------|-------------------------------------|---------------------------------------------|-------------------------------------------|-------------------------------------------------|------------------------------------------------------------|------------------------------------------------|-----------------------------------------------|
| Environment <input type="checkbox"/>  | Design <input type="checkbox"/>     | Doc/Data <input type="checkbox"/>           | Equip/Tooling <input type="checkbox"/>    | Pressure/Forced <input type="checkbox"/>        | Temperature/Cure <input type="checkbox"/>                  | Power Loss/Surge <input type="checkbox"/>      | Positioned Wrong <input type="checkbox"/>     |
| Handling/Pre <input type="checkbox"/> | Material <input type="checkbox"/>   | Internal Transport <input type="checkbox"/> | Tribal Knowledge <input type="checkbox"/> | Bending <input type="checkbox"/>                | Set-up <input type="checkbox"/>                            | Folio/Program <input type="checkbox"/>         | Outside Dimensions <input type="checkbox"/>   |
| LOA <input type="checkbox"/>          | Substation <input type="checkbox"/> | Past Expiry Date <input type="checkbox"/>   | Misidentified <input type="checkbox"/>    | Centre Not Concentric <input type="checkbox"/>  | BOM/Route <input type="checkbox"/>                         | Grain <input type="checkbox"/>                 | Over/Under tolerance <input type="checkbox"/> |
|                                       |                                     |                                             |                                           | Cracks <input type="checkbox"/>                 | Broken/Damage/Defect <input type="checkbox"/>              | Weld <input type="checkbox"/>                  | Part Incorrect <input type="checkbox"/>       |
|                                       |                                     |                                             |                                           | Crimp/Kink/Ripple/Wave <input type="checkbox"/> | Inspection Incomplete/Unqualified <input type="checkbox"/> | Wrong Stock Pulled <input type="checkbox"/>    | Part Lost/Missing <input type="checkbox"/>    |
|                                       |                                     |                                             |                                           | Cuffs <input type="checkbox"/>                  | Contamination <input type="checkbox"/>                     | Out of Sequence <input type="checkbox"/>       | Part Moved <input type="checkbox"/>           |
|                                       |                                     |                                             |                                           | Crushing <input type="checkbox"/>               | Countersink <input type="checkbox"/>                       | Off-set <input type="checkbox"/>               | Drawing <input type="checkbox"/>              |
|                                       |                                     |                                             |                                           | Heat Treat <input type="checkbox"/>             | Cut Too Short <input type="checkbox"/>                     | Mislabeled <input type="checkbox"/>            | Finish <input type="checkbox"/>               |
|                                       |                                     |                                             |                                           | Wave/Twist in Tube <input type="checkbox"/>     | Instructions Incomplete/Unclear <input type="checkbox"/>   | Fit/Function <input type="checkbox"/>          | Misread <input type="checkbox"/>              |
|                                       |                                     |                                             |                                           | Marks/Chatter <input type="checkbox"/>          | Drill Holes <input type="checkbox"/>                       | Misaligned/off center <input type="checkbox"/> | Turning Sequence <input type="checkbox"/>     |
|                                       |                                     |                                             |                                           | OTHER : _____                                   |                                                            |                                                |                                               |



# Picklist Print

Friday, May 06, 2016 9:08:16 AM

Page 2

Work Order ID: 145531

**\*145531\***

Parent Item: D412-742-043

**\*D412-742-043\***

Parent Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.

Start Date: 4/25/2016

Required Date: 5/5/2016

Start Qty: 1.00

Required Qty: 1.00

AN3C4A

Purchased

No

110

Each

955.0000

24

24

**\*AN3C4A\***

**\*\***

Bolt

*all 16/08/17*

Location

Loc Qty

Loc Code

FG

20

*M135058*

*v2v*

122814

20

FP001

323

M133440

7

M134396

41

M134509

246

M134606

29

OVER002

500

M134502

200

M134676

300

ST350

112

M134134

18

M134396

94

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                              |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                              |  |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Step #: _____                                                                                                                                                                      | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | MRB (QSI042) Approval                        |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                    | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | Completed By                                 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | Lead hand / Supervisor Approval Verification |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | QC / QA Coordinator Approval                 |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                              |  |
| <b>Root Cause</b><br><div style="display: flex; justify-content: space-between;"> <div>           Environment <input type="checkbox"/><br/>           Design <input type="checkbox"/><br/>           Doc/Data <input type="checkbox"/><br/>           Equip/Tooling <input type="checkbox"/><br/>           Handling/Pre <input type="checkbox"/><br/>           Material <input type="checkbox"/><br/>           Internal Transport <input type="checkbox"/><br/>           Tribal Knowledge <input type="checkbox"/><br/>           LOA <input type="checkbox"/><br/>           Substation <input type="checkbox"/><br/>           Past Expiry Date <input type="checkbox"/><br/>           Misidentified <input type="checkbox"/> </div> <div>           No Re-verification <input type="checkbox"/><br/>           Operator <input type="checkbox"/><br/>           Offset/Setup <input type="checkbox"/><br/>           Supplier <input type="checkbox"/><br/>           Training <input type="checkbox"/><br/>           Use for Testing <input type="checkbox"/><br/>           Poor Information <input type="checkbox"/><br/>           Rushing <input type="checkbox"/><br/>           Product Improvement <input type="checkbox"/><br/>           Process Improvement <input type="checkbox"/><br/>           Manufacturing Process <input type="checkbox"/><br/>           Past Due <input type="checkbox"/> </div> </div> |                                                                                                                                                                                    | <b>FAULT CATEGORY</b><br><div style="display: flex; justify-content: space-between;"> <div>           Pressure/Forced <input type="checkbox"/><br/>           Bending <input type="checkbox"/><br/>           Centre Not Concentric <input type="checkbox"/><br/>           Cracks <input type="checkbox"/><br/>           Crimp/Kink/Ripple/Wave <input type="checkbox"/><br/>           Cuffs <input type="checkbox"/><br/>           Crushing <input type="checkbox"/><br/>           Heat Treat <input type="checkbox"/><br/>           Wave/Twist in Tube <input type="checkbox"/><br/>           Marks/Chatter <input type="checkbox"/> </div> <div>           Temperature/Cure <input type="checkbox"/><br/>           Set-up <input type="checkbox"/><br/>           BOM/Route <input type="checkbox"/><br/>           Broken/Damage/Defect <input type="checkbox"/><br/>           Inspection Incomplete/Unqualified <input type="checkbox"/><br/>           Contamination <input type="checkbox"/><br/>           Countersink <input type="checkbox"/><br/>           Cut Too Short <input type="checkbox"/><br/>           Instructions Incomplete/Unclear <input type="checkbox"/><br/>           Drill Holes <input type="checkbox"/> </div> <div>           Power Loss/Surge <input type="checkbox"/><br/>           Folio/Program <input type="checkbox"/><br/>           Grain <input type="checkbox"/><br/>           Weld <input type="checkbox"/><br/>           Wrong Stock Pulled <input type="checkbox"/><br/>           Out of Sequence <input type="checkbox"/><br/>           Off-set <input type="checkbox"/><br/>           Mislabeled <input type="checkbox"/><br/>           Fit/Function <input type="checkbox"/><br/>           Misaligned/off center <input type="checkbox"/> </div> <div>           Positioned Wrong <input type="checkbox"/><br/>           Outside Dimensions <input type="checkbox"/><br/>           Over/Under tolerance <input type="checkbox"/><br/>           Part Incorrect <input type="checkbox"/><br/>           Part Lost/Missing <input type="checkbox"/><br/>           Part Moved <input type="checkbox"/><br/>           Drawing <input type="checkbox"/><br/>           Finish <input type="checkbox"/><br/>           Misread <input type="checkbox"/><br/>           Turning Sequence <input type="checkbox"/> </div> </div> |  |                                              |  |
| OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |                                              |  |

# Picklist Print

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Work Order ID: 145531

**\*145531\***

Parent Item: D412-742-043

**\*D412-742-043\***

Parent Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.

Start Date: 4/25/2016

Required Date: 5/5/2016

Start Qty: 1.00

Required Qty: 1.00

AN3C6A

Purchased

No

110

Each

174.0000

10

**\*AN3C6A\***

Bolt

\*\*

DAS  
10  
9.89

16/08/17

Location

Loc Qty

Loc Code

CA  
m128704  
FG  
122416  
FP001  
m128769  
m133363  
m133990  
ST338a  
m133077  
ST349  
m132767  
m133694  
m134502

31  
31  
10  
10  
28  
10  
5  
13  
6  
6  
99  
4  
1  
94

11134762

4

AN3C7A

Purchased

No

110

Each

559.0000

4

**\*AN3C7A\***

Bolt

\*\*

16/08/17

Location

Loc Qty

Loc Code

FG  
122141  
FP001  
m125709  
OVER002  
m125709  
ST349  
m125709

10  
10  
52  
52  
400  
400  
97  
97

Friday, May 06, 2016 9:08:16 AM

Shop Packet Print

Page 3

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|--------------------------------------------|----------------------------------|----------------------------------------|------------------------------------|----------------------------------------------|--------------------------------|------------------------------------|------------------------------------|-----------------------------------|--|
| Work Order: _____<br><br>Part No. <u>243 01</u><br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                          |                                      | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><table style="width:100%; border: none;"> <tr> <td style="border: none;">Skid-tube <input type="checkbox"/></td> <td style="border: none;">Cross tube <input type="checkbox"/></td> <td style="border: none;">Water Jet <input type="checkbox"/></td> <td style="border: none;">Engineering <input type="checkbox"/></td> </tr> <tr> <td style="border: none;">Machining <input type="checkbox"/></td> <td style="border: none;">Small Fab <input type="checkbox"/></td> <td style="border: none;">Prod. Eng. Coord. <input type="checkbox"/></td> <td style="border: none;">Quality <input type="checkbox"/></td> </tr> <tr> <td style="border: none;">Thermoforming <input type="checkbox"/></td> <td style="border: none;">Finishing <input type="checkbox"/></td> <td style="border: none;">Rec/Store/Packaging <input type="checkbox"/></td> <td style="border: none;">Other <input type="checkbox"/></td> </tr> <tr> <td style="border: none;">Large Fab <input type="checkbox"/></td> <td style="border: none;">Composite <input type="checkbox"/></td> <td style="border: none;">Supplier <input type="checkbox"/></td> <td style="border: none;"></td> </tr> </table> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                                                                        |  | Skid-tube <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                     | Cross tube <input type="checkbox"/> | Water Jet <input type="checkbox"/> | Engineering <input type="checkbox"/> | Machining <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                | Small Fab <input type="checkbox"/> | Prod. Eng. Coord. <input type="checkbox"/> | Quality <input type="checkbox"/> | Thermoforming <input type="checkbox"/> | Finishing <input type="checkbox"/> | Rec/Store/Packaging <input type="checkbox"/> | Other <input type="checkbox"/> | Large Fab <input type="checkbox"/> | Composite <input type="checkbox"/> | Supplier <input type="checkbox"/> |  |
| Skid-tube <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Cross tube <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Water Jet <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                          | Engineering <input type="checkbox"/> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Machining <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Small Fab <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Prod. Eng. Coord. <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                  | Quality <input type="checkbox"/>     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Thermoforming <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Finishing <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Rec/Store/Packaging <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                | Other <input type="checkbox"/>       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Large Fab <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Composite <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Supplier <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                           |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Date :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Step #:                                                                                                                                                                                                                                                                                                                                                                                                                     |                                      | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MRB (QSI042) Approval |                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                      | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       | Completed By _____<br><br>Lead hand / Supervisor Approval Verification _____<br><br>QC / QA Coordinator Approval _____ |  |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Root Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FAULT CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                              |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
| Environment <input type="checkbox"/><br>Design <input type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/> |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Temperature/Cure <input type="checkbox"/><br>Set-up <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damage/Defect <input type="checkbox"/><br>Inspection Incomplete/Unqualified <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Drill Holes <input type="checkbox"/> |                       |                                                                                                                        |  | Power Loss/Surge <input type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Misabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/> |                                     |                                    |                                      | Positioned Wrong <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Turning Sequence <input type="checkbox"/> |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                               |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                                                                                                                        |  |                                                                                                                                                                                                                                                                                                                                                                                                                        |                                     |                                    |                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                    |                                            |                                  |                                        |                                    |                                              |                                |                                    |                                    |                                   |  |



# Picklist Print

Friday, May 06, 2016 9:08:16 AM

Page 4

Work Order ID: 145531

**\*145531\***

Parent Item: D412-742-043

**\*D412-742-043\***

Parent Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.

Start Date: 4/25/2016

Required Date: 5/5/2016

Start Qty: 1.00

Required Qty: 1.00

NAS1149C0332R

Purchased

No

110

Each

3,049.000

28

28

**\*NAS1149C0332R\***

WASHER

**\*\***

*ll 16/08/17*

Location

Loc Qty

Loc Code

FP001

1582

*M135046*

*x28*

m132262

4

m132930

1004

m134063

446

m134073

128

GA

225

m133284

225

ST266

1242

m134474

142

m134574

1000

m134654

100

D4095-041

Manufactured

No

110

Each

5.0000

1

1

**\*D4095-041\***

Wearplate Fwd

**\*\***

*ll 16/08/17*

Location

Loc Qty

Loc Code

FP001

1

*B 1427731*

*x1*

138304

1

FP002

4

139765

4

D4095-043

Manufactured

No

110

Each

8.0000

1

1

**\*D4095-043\***

Wearplate Aft

**\*\***

*ll 16/08/17*

Location

Loc Qty

Loc Code

FP002

8

*B 147931*

*x1*

138323

1

139766

4

140674

3

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Shop Packet Print

Page 4

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                            |  |  |
|--------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____ |  | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/> |  | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |  |  |                                                                                                                                                            |  |  |
| Date :                                                       |  | Step #:                                                                                                                                                                            |  | QTY Effective :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  | <b>MRB (QSI042) Approval</b><br><br>Completed By _____<br><br>Lead hand / Supervisor Approval Verification _____<br><br>QC / QA Coordinator Approval _____ |  |  |
| Description Work Order Deviation                             |  |                                                                                                                                                                                    |  | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |  |  |                                                                                                                                                            |  |  |
|                                                              |  |                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |  |                                                                                                                                                            |  |  |

| Root Cause         |                          |                       |                          | FAULT CATEGORY         |                          |                                   |                          |
|--------------------|--------------------------|-----------------------|--------------------------|------------------------|--------------------------|-----------------------------------|--------------------------|
| Environment        | <input type="checkbox"/> | No Re-verification    | <input type="checkbox"/> | Pressure/Forced        | <input type="checkbox"/> | Temperature/Cure                  | <input type="checkbox"/> |
| Design             | <input type="checkbox"/> | Operator              | <input type="checkbox"/> | Bending                | <input type="checkbox"/> | Set-up                            | <input type="checkbox"/> |
| Doc/Data           | <input type="checkbox"/> | Offset/Setup          | <input type="checkbox"/> | Centre Not Concentric  | <input type="checkbox"/> | BOM/Route                         | <input type="checkbox"/> |
| Equip/Tooling      | <input type="checkbox"/> | Supplier              | <input type="checkbox"/> | Cracks                 | <input type="checkbox"/> | Broken/Damage/Defect              | <input type="checkbox"/> |
| Handling/Pre       | <input type="checkbox"/> | Training              | <input type="checkbox"/> | Crimp/Kink/Ripple/Wave | <input type="checkbox"/> | Inspection Incomplete/Unqualified | <input type="checkbox"/> |
| Material           | <input type="checkbox"/> | Use for Testing       | <input type="checkbox"/> | Cuffs                  | <input type="checkbox"/> | Contamination                     | <input type="checkbox"/> |
| Internal Transport | <input type="checkbox"/> | Poor Information      | <input type="checkbox"/> | Crushing               | <input type="checkbox"/> | Countersink                       | <input type="checkbox"/> |
| Tribal Knowledge   | <input type="checkbox"/> | Rushing               | <input type="checkbox"/> | Heat Treat             | <input type="checkbox"/> | Cut Too Short                     | <input type="checkbox"/> |
| LOA                | <input type="checkbox"/> | Product Improvement   | <input type="checkbox"/> | Wave/Twist in Tube     | <input type="checkbox"/> | Instructions Incomplete/Unclear   | <input type="checkbox"/> |
| Substation         | <input type="checkbox"/> | Process Improvement   | <input type="checkbox"/> | Marks/Chatter          | <input type="checkbox"/> | Drill Holes                       | <input type="checkbox"/> |
| Past Expiry Date   | <input type="checkbox"/> | Manufacturing Process | <input type="checkbox"/> | <b>OTHER :</b> _____   |                          |                                   |                          |
| Misidentified      | <input type="checkbox"/> | Past Due              | <input type="checkbox"/> |                        |                          |                                   |                          |

# Picklist Print

Friday, May 06, 2016 9:08:16 AM

Page 5

Work Order ID: 145531

**\*145531\***

Parent Item: D412-742-043

**\*D412-742-043\***

Parent Item Name: Repl. Skidtube Fits LH or RH, High Gear, DART (Apical) Tri-Bag Float Comp.

Start Date: 4/25/2016

Required Date: 5/5/2016

Start Qty: 1.00

Required Qty: 1.00

D4095-045

Manufactured No

110

Each

6.0000

1

1

**\*D4095-045\***

Wearplate Center

**\*\***

*all 16/08/17*

Location

Loc Qty

Loc Code

FP002

6

*B146809*

*✓*

140675

6

*✓*

*\* AN5C7A / M132930*

*(x10)*

*all 16/08/17*

**DAS  
10  
9-89**

DQA: \_\_\_\_\_ Date: \_\_\_\_\_



## WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: \_\_\_\_\_ Date: \_\_\_\_\_

Work Order update only ☐

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Work Order: _____<br><br>Part No. _____<br><br>NCR No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>DISPOSITION</b><br><br>Rework <input type="checkbox"/><br>Scrap <input type="checkbox"/><br>Use-as-is <input type="checkbox"/><br>Suspected Unapproved <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                      | <b>AGAINST DEPARTMENT/PROCESS</b><br><br><div style="display: flex; justify-content: space-between;"> <div>           Skid-tube <input type="checkbox"/><br/>           Machining <input type="checkbox"/><br/>           Thermoforming <input type="checkbox"/><br/>           Large Fab <input type="checkbox"/> </div> <div>           Cross tube <input type="checkbox"/><br/>           Small Fab <input type="checkbox"/><br/>           Finishing <input type="checkbox"/><br/>           Composite <input type="checkbox"/> </div> <div>           Water Jet <input type="checkbox"/><br/>           Prod. Eng. Coord. <input type="checkbox"/><br/>           Rec/Store/Packaging <input type="checkbox"/><br/>           Supplier <input type="checkbox"/> </div> <div>           Engineering <input type="checkbox"/><br/>           Quality <input type="checkbox"/><br/>           Other <input type="checkbox"/> </div> </div> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Date : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Step #: _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | QTY Effective : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | MRB (QSI042) Approval                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Description Work Order Deviation                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Disposition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Completed By                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Lead hand / Supervisor<br>Approval Verification                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | QC / QA Coordinator<br>Approval                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Root Cause                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FAULT CATEGORY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Environment <input type="checkbox"/><br>Design <input type="checkbox"/><br>Doc/Data <input type="checkbox"/><br>Equip/Tooling <input type="checkbox"/><br>Handling/Pre <input type="checkbox"/><br>Material <input type="checkbox"/><br>Internal Transport <input type="checkbox"/><br>Tribal Knowledge <input type="checkbox"/><br>LOA <input type="checkbox"/><br>Substation <input type="checkbox"/><br>Past Expiry Date <input type="checkbox"/><br>Misidentified <input type="checkbox"/> | No Re-verification <input type="checkbox"/><br>Operator <input type="checkbox"/><br>Offset/Setup <input type="checkbox"/><br>Supplier <input type="checkbox"/><br>Training <input type="checkbox"/><br>Use for Testing <input type="checkbox"/><br>Poor Information <input type="checkbox"/><br>Rushing <input type="checkbox"/><br>Product Improvement <input type="checkbox"/><br>Process Improvement <input type="checkbox"/><br>Manufacturing Process <input type="checkbox"/><br>Past Due <input type="checkbox"/> | Pressure/Forced <input type="checkbox"/><br>Bending <input type="checkbox"/><br>Centre Not Concentric <input type="checkbox"/><br>Cracks <input type="checkbox"/><br>Crimp/Kink/Ripple/Wave <input type="checkbox"/><br>Cuffs <input type="checkbox"/><br>Crushing <input type="checkbox"/><br>Heat Treat <input type="checkbox"/><br>Wave/Twist in Tube <input type="checkbox"/><br>Marks/Chatter <input type="checkbox"/>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Temperature/Cure <input type="checkbox"/><br>Set-up <input type="checkbox"/><br>BOM/Route <input type="checkbox"/><br>Broken/Damage/Defect <input type="checkbox"/><br>Inspection Incomplete/Unqualified <input type="checkbox"/><br>Contamination <input type="checkbox"/><br>Countersink <input type="checkbox"/><br>Cut Too Short <input type="checkbox"/><br>Instructions Incomplete/Unclear <input type="checkbox"/><br>Drill Holes <input type="checkbox"/> | Power Loss/Surge <input type="checkbox"/><br>Folio/Program <input type="checkbox"/><br>Grain <input type="checkbox"/><br>Weld <input type="checkbox"/><br>Wrong Stock Pulled <input type="checkbox"/><br>Out of Sequence <input type="checkbox"/><br>Off-set <input type="checkbox"/><br>Mislabeled <input type="checkbox"/><br>Fit/Function <input type="checkbox"/><br>Misaligned/off center <input type="checkbox"/> | Positioned Wrong <input type="checkbox"/><br>Outside Dimensions <input type="checkbox"/><br>Over/Under tolerance <input type="checkbox"/><br>Part Incorrect <input type="checkbox"/><br>Part Lost/Missing <input type="checkbox"/><br>Part Moved <input type="checkbox"/><br>Drawing <input type="checkbox"/><br>Finish <input type="checkbox"/><br>Misread <input type="checkbox"/><br>Turning Sequence <input type="checkbox"/> |
| OTHER : _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                   |



# D3391-041/-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

| QTY<br>-041 | QTY<br>-043 | PART NUMBER   | DESCRIPTION             |
|-------------|-------------|---------------|-------------------------|
| X           |             | D3391-041     | FLOAT SKIDTUBE ASSEMBLY |
|             | X           | D3391-043     | FLOAT SKIDTUBE ASSEMBLY |
| 1           |             | D3391-011     | FWD TUBE ASSEMBLY       |
| 1           |             | D3391-013     | MID TUBE ASSEMBLY       |
| 1           |             | D3391-015     | AFT TUBE ASSEMBLY       |
|             | 1           | D3391-021     | FWD TUBE ASSEMBLY       |
|             | 1           | D3391-023     | MID TUBE ASSEMBLY       |
|             | 1           | D3391-025     | AFT TUBE ASSEMBLY       |
| 2           | 2           | D3591-1       | BUSHING                 |
| 4           |             | D3672-3       | WASHER                  |
| 1           | 1           | D4095-041     | WEARSHOE                |
| 1           | 1           | D4095-043     | WEARSHOE                |
| 1           | 1           | D4095-045     | WEARSHOE                |
| 1           | 1           | D4095-047     | WEARPAD                 |
| 1           | 1           | D4095-049     | WEARPAD                 |
| 1           | 1           | D4095-051     | WEARSHOE                |
| 24          | 24          | AN3C4A        | BOLT                    |
| 4           | 4           | AN3C6A        | BOLT                    |
| 10          | 10          | AN5C7A        | BOLT                    |
| 28          | 28          | NAS1149C0332R | WASHER                  |
| 10          | 10          | NAS1149C0532R | WASHER                  |
| 4           |             | MS27039C4-12  | SCREW                   |
| 4           |             | NAS1149C0432R | WASHER                  |

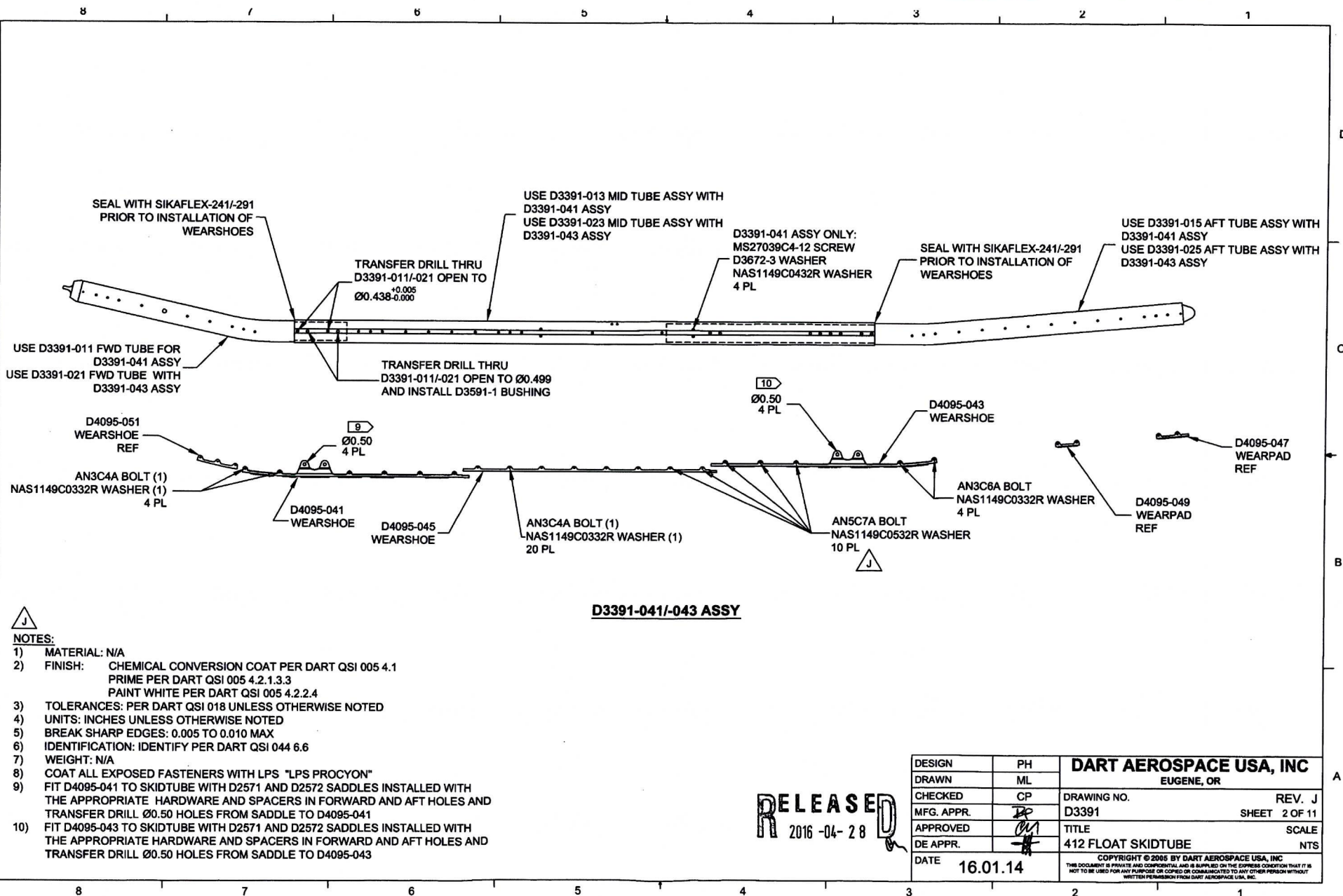
J

|            |                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                     |               |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| J          | INCORPORATED DSI 9733, REFORMAT DRAWING CHANGED CBORE DEPTH (ZN D2-8, D2-9), REVISED TABLES, REPLACED POWDER COAT WITH PAINT                                                                                                                                                         | ML                                                                                                                                                                                                                                                                                                  | 16.01.14      |
| I          | REMOVE GASKETS AND REPLACE ALL WEARSHOES; PARTS LIST UPDATE, ZN A8-1, ZN A8-2, ZN A6-4, ZN B6-8; LPS-3 COATING REMOVED FROM NOTE 2, ZN A3-1, ZN A3-2, REMOVED INSERT AELS-1032-130, ZN B6-4, B2-4, C7-8, C3-8; REMOVED HOLES, ZN D6-4 ZN D2-4, ZN D7-8, ZN D3-8                      | XDF                                                                                                                                                                                                                                                                                                 | 11.10.13      |
| H          | DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074) | AJS                                                                                                                                                                                                                                                                                                 | 08.08.20      |
| G          | REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY                                                                                                                                                              | DC                                                                                                                                                                                                                                                                                                  | 07.07.31      |
| F          | ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021                                                                                                                                                                                                                             | PH                                                                                                                                                                                                                                                                                                  | 07.01.18      |
| E          | CHANGE TOLERANCE, EASE MANUFACTURE                                                                                                                                                                                                                                                   | PH                                                                                                                                                                                                                                                                                                  | 06.04.25      |
| D          | UPDATE TOLERANCE, CHANGE HOLE SIZE                                                                                                                                                                                                                                                   | PH                                                                                                                                                                                                                                                                                                  | 06.01.23      |
| C          | LENGTHEN AFT EXTENSION                                                                                                                                                                                                                                                               | PH                                                                                                                                                                                                                                                                                                  | 05.09.27      |
| B          | DRAWING UPDATES                                                                                                                                                                                                                                                                      | PH                                                                                                                                                                                                                                                                                                  | 05.06.10      |
| A          | NEW ISSUE                                                                                                                                                                                                                                                                            | PH                                                                                                                                                                                                                                                                                                  | 05.02.07      |
| REV        | DESCRIPTION                                                                                                                                                                                                                                                                          | BY                                                                                                                                                                                                                                                                                                  | DATE          |
| DESIGN     | PH                                                                                                                                                                                                                                                                                   | <b>DART AEROSPACE USA, INC</b><br>EUGENE, OR                                                                                                                                                                                                                                                        |               |
| DRAWN      | ML                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                     |               |
| CHECKED    | CP                                                                                                                                                                                                                                                                                   | DRAWING NO.                                                                                                                                                                                                                                                                                         | REV. J        |
| MFG. APPR. | DP                                                                                                                                                                                                                                                                                   | D3391                                                                                                                                                                                                                                                                                               | SHEET 1 OF 11 |
| APPROVED   | DP                                                                                                                                                                                                                                                                                   | TITLE                                                                                                                                                                                                                                                                                               | SCALE         |
| DE APPR.   | DP                                                                                                                                                                                                                                                                                   | 412 FLOAT SKIDTUBE                                                                                                                                                                                                                                                                                  | NTS           |
| DATE       | 16.01.14                                                                                                                                                                                                                                                                             | <small>COPYRIGHT © 2005 BY DART AEROSPACE USA, INC<br/> THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small> |               |

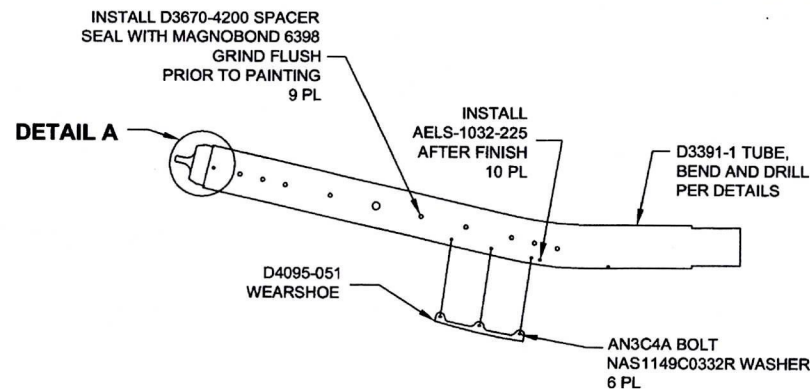
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2016-04-28  
ECN 16-96

w/o 145531

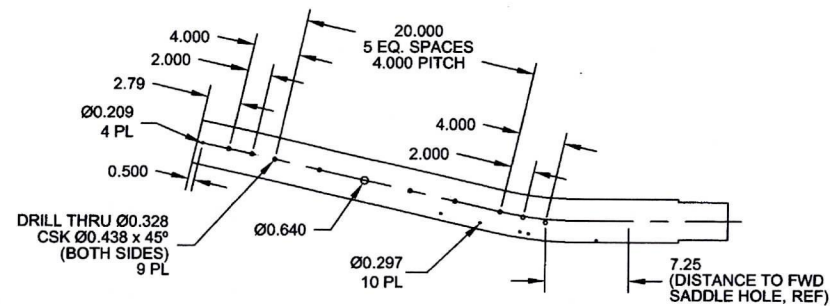
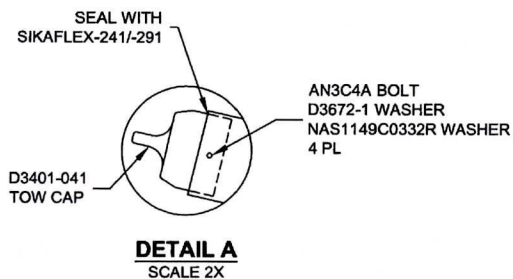
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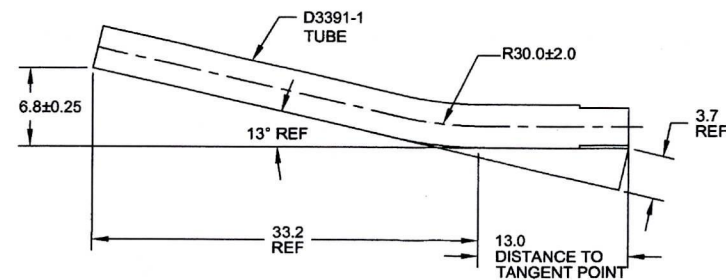
RELEASED  
2016-04-28



**D3391-011 FWD TUBE ASSEMBLY**  
ASSEMBLY DETAIL



**D3391-011 DRILLING DETAIL**



**D3391-011 BENDING DETAIL**  
(MAKE FROM D3391-1)

**D3391-011 FWD TUBE ASSEMBLY PARTS LIST**

| QTY -011 | PART NUMBER   | DESCRIPTION       |
|----------|---------------|-------------------|
| X        | D3391-011     | FWD TUBE ASSEMBLY |
| 1        | D3391-1       | TUBE              |
| 1        | D3401-041     | TOW CAP           |
| 9        | D3670-4200    | SPACER            |
| 4        | D3672-1       | WASHER            |
| 1        | D4095-051     | WEARSHOE          |
| 10       | AELS-1032-225 | INSERT            |
| 10       | AN3C4A        | BOLT              |
| 10       | NAS1149C0332R | WASHER            |

|                                                                                                                                                                                                                                     |           |                                             |               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|---------------------------------------------|---------------|
| DESIGN                                                                                                                                                                                                                              | PH        | <b>DART AEROSPACE USA, INC</b>              |               |
| DRAWN                                                                                                                                                                                                                               | ML        | EUGENE, OR                                  |               |
| CHECKED                                                                                                                                                                                                                             | CP        | DRAWING NO.                                 | REV. J        |
| MFG. APPR.                                                                                                                                                                                                                          | <i>Be</i> | D3391                                       | SHEET 3 OF 11 |
| APPROVED                                                                                                                                                                                                                            | <i>SL</i> | TITLE                                       | SCALE         |
| DE APPR.                                                                                                                                                                                                                            | <i>SL</i> | 412 FLOAT SKIDTUBE                          | NTS           |
| DATE                                                                                                                                                                                                                                | 16.01.14  | COPYRIGHT © 2005 BY DART AEROSPACE USA, INC |               |
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**RELEASED**  
2016-04-28

INSTALL D3670-4200 SPACER  
SEAL WITH MAGNOBOND 6398  
GRIND FLUSH  
PRIOR TO PAINTING  
4 PL

INSTALL  
AELS-1032-225  
AFTER FINISH  
10 PL

D4095-051  
WEARSHOE

AN3C4A BOLT  
NAS1149C0332R WASHER  
6 PL

### D3391-021 FWD TUBE ASSEMBLY ASSEMBLY DETAIL

SEAL WITH  
SIKAFLEX-241/-291

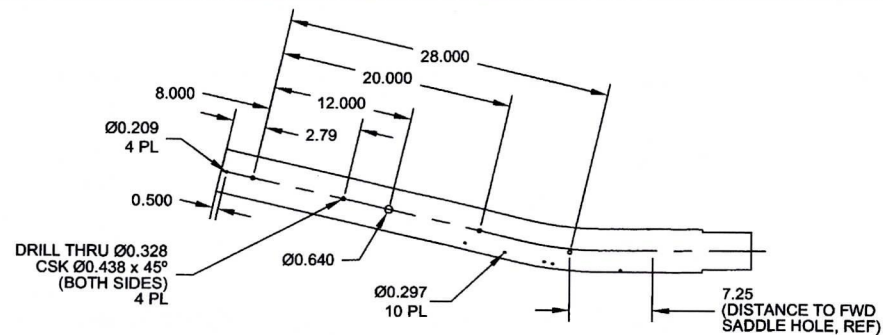
AN3C4A BOLT  
D3672-1 WASHER  
NAS1149C0332R WASHER  
4 PL

D3401-041  
TOW CAP

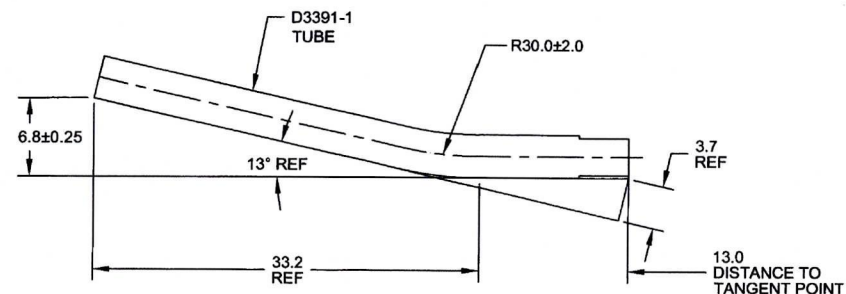
### DETAIL B SCALE 2X

### D3391-021 FWD TUBE ASSEMBLY PARTS LIST

| QTY<br>-021 | PART NUMBER   | DESCRIPTION       |
|-------------|---------------|-------------------|
| X           | D3391-021     | FWD TUBE ASSEMBLY |
| 1           | D3391-1       | TUBE              |
| 1           | D3401-041     | TOW CAP           |
| 4           | D3670-4200    | SPACER            |
| 4           | D3672-1       | WASHER            |
| 1           | D4095-051     | WEARSHOE          |
| 10          | AELS-1032-225 | INSERT            |
| 10          | AN3C4A        | BOLT              |
| 10          | NAS1149C0332R | WASHER            |



### D3391-021 DRILLING DETAIL

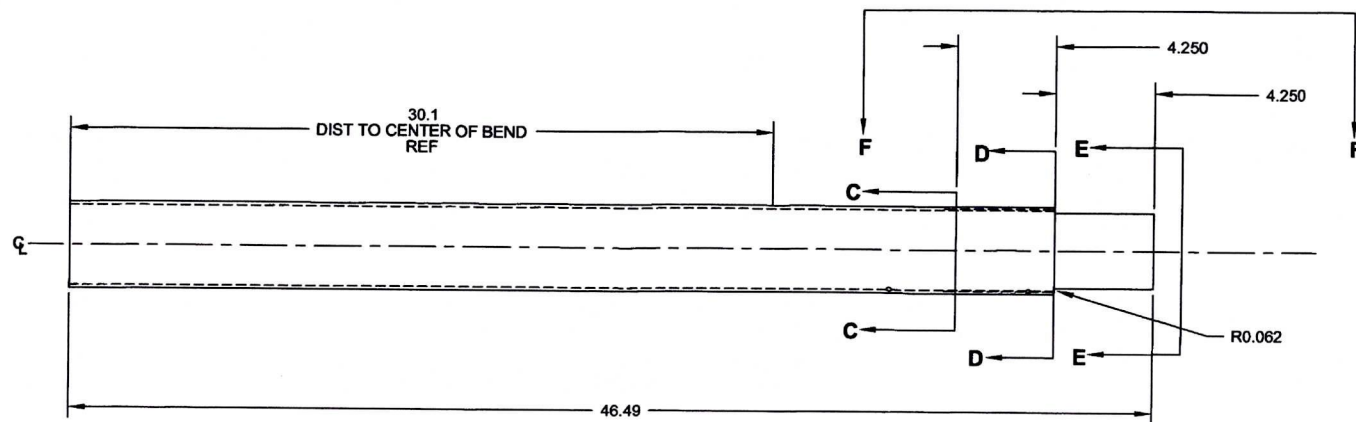


### D3391-021 BENDING DETAIL (MAKE FROM D3391-1)

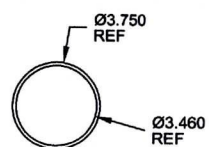
|            |          |                                                                                                                                                                                                                                                                                         |               |
|------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| DESIGN     | PH       | <b>DART AEROSPACE USA, INC</b>                                                                                                                                                                                                                                                          |               |
| DRAWN      | ML       | EUGENE, OR                                                                                                                                                                                                                                                                              |               |
| CHECKED    | CP       | DRAWING NO.                                                                                                                                                                                                                                                                             | REV. J        |
| MFG. APPR. | TS       | D3391                                                                                                                                                                                                                                                                                   | SHEET 4 OF 11 |
| APPROVED   | TS       | TITLE                                                                                                                                                                                                                                                                                   | SCALE         |
| DE APPR.   | TS       | 412 FLOAT SKIDTUBE                                                                                                                                                                                                                                                                      | NTS           |
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2016-04-28

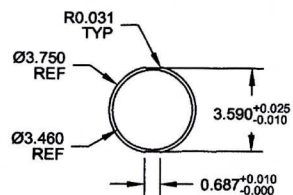




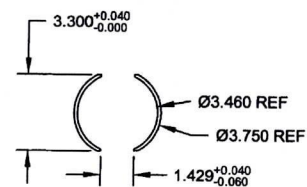
**D3391-1 TUBE**  
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



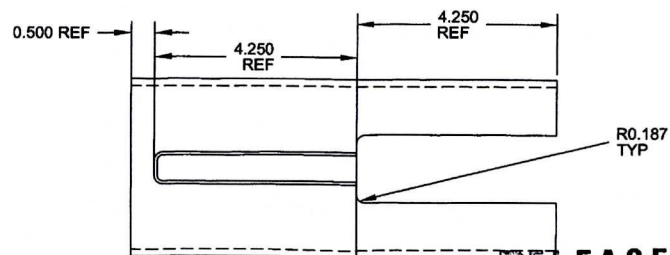
**SECTION C-C**



**SECTION D-D**



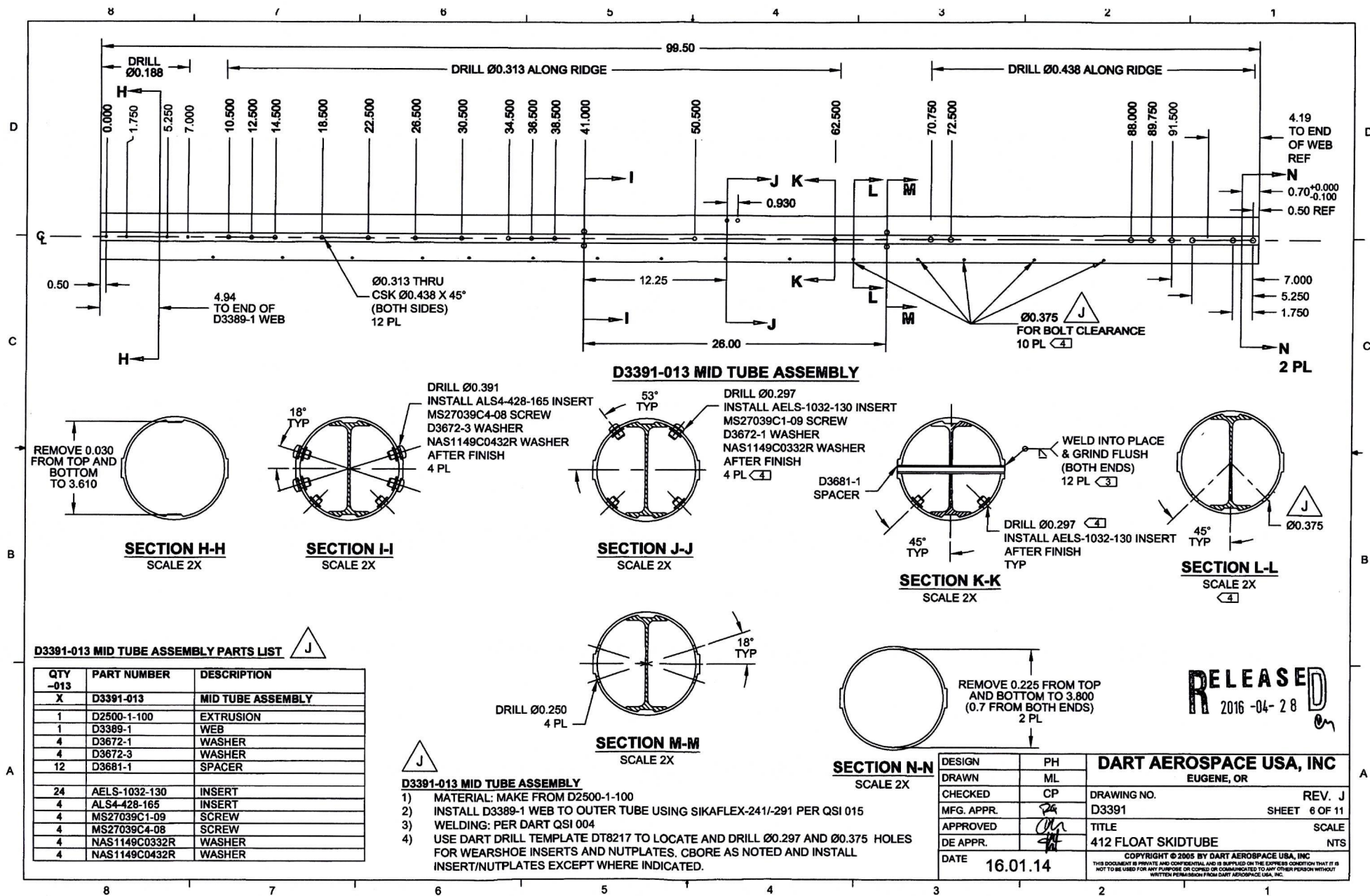
**SECTION E-E**

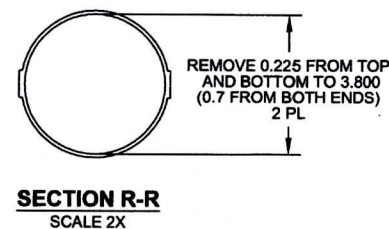
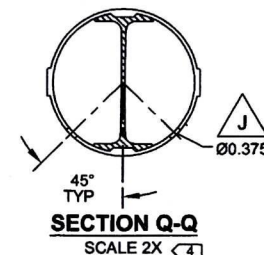
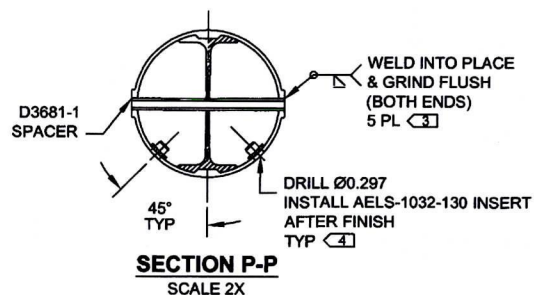
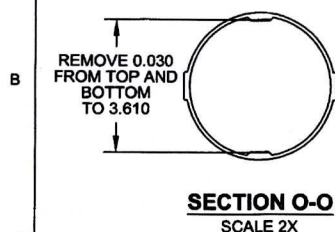
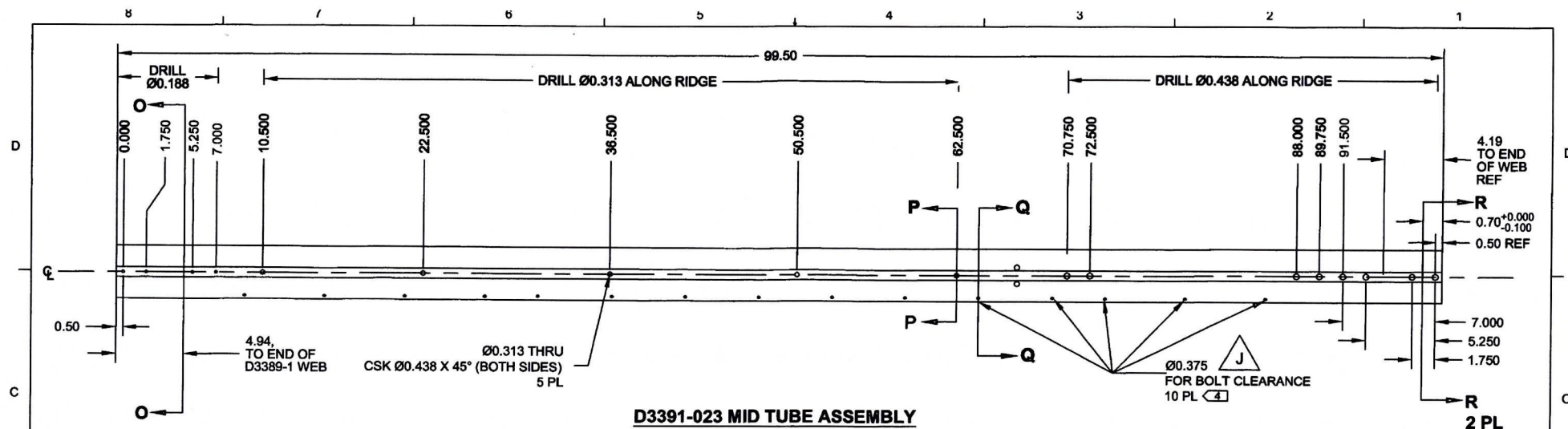


**VIEW F-F**  
SCALE 2X

**RELEASED**  
2016-04-28

|            |          |                                                                                                                                                                                                                                                                                                   |               |
|------------|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| DESIGN     | PH       | <b>DART AEROSPACE USA, INC</b>                                                                                                                                                                                                                                                                    |               |
| DRAWN      | ML       | EUGENE, OR                                                                                                                                                                                                                                                                                        |               |
| CHECKED    | CP       | DRAWING NO.                                                                                                                                                                                                                                                                                       | REV. J        |
| MFG. APPR. | 2-2      | D3391                                                                                                                                                                                                                                                                                             | SHEET 5 OF 11 |
| APPROVED   | 1        | TITLE                                                                                                                                                                                                                                                                                             | SCALE         |
| DE APPR.   | 1        | 412 FLOAT SKIDTUBE                                                                                                                                                                                                                                                                                | NTS           |
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**D3391-023 MID TUBE ASSEMBLY PARTS LIST**

| QTY -023 | PART NUMBER   | DESCRIPTION       |
|----------|---------------|-------------------|
| X        | D3391-023     | MID TUBE ASSEMBLY |
| 1        | D2500-1-100   | EXTRUSION         |
| 1        | D3389-1       | WEB               |
| 5        | D3681-1       | SPACER            |
| 20       | AELS-1032-130 | INSERT            |



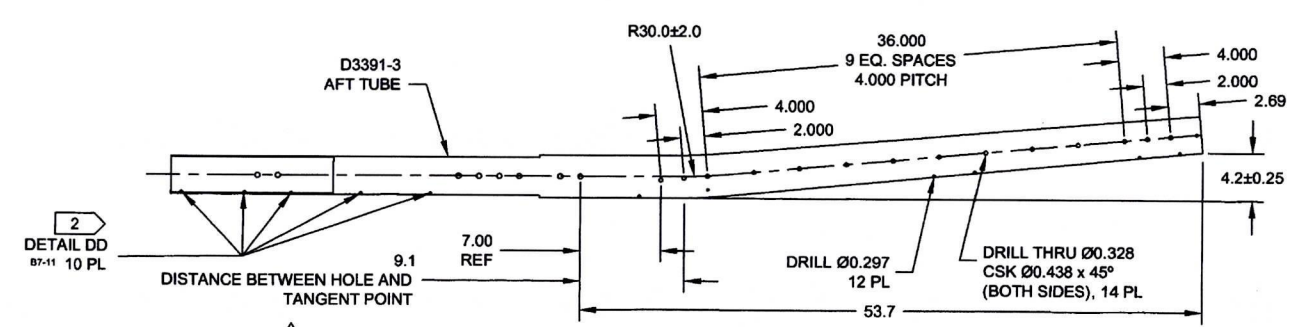
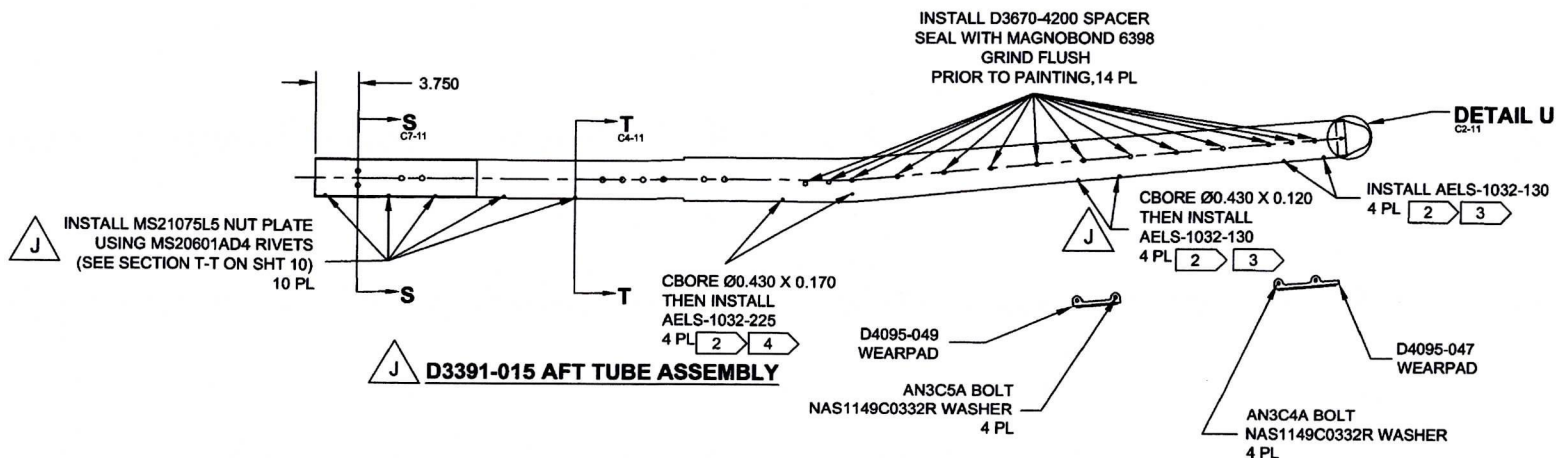
**D3391-023 MID TUBE ASSEMBLY**

- 1) MATERIAL: MAKE FROM D2500-1-100
- 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
- 3) WELDING: PER DART QSI 004
- 4) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 AND Ø0.375 HOLES FOR WEARSHOE INSERTS AND NUTPLATES. CBORE AS NOTED AND INSTALL INSERT/NUTPLATES EXCEPT WHERE INDICATED.

|                                                                                                                                                                                                                                   |          |                                             |               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------|---------------|
| DESIGN                                                                                                                                                                                                                            | PH       | <b>DART AEROSPACE USA, INC</b>              |               |
| DRAWN                                                                                                                                                                                                                             | ML       | EUGENE, OR                                  |               |
| CHECKED                                                                                                                                                                                                                           | CP       | DRAWING NO.                                 | REV. J        |
| MFG. APPR.                                                                                                                                                                                                                        |          | D3391                                       | SHEET 7 OF 11 |
| APPROVED                                                                                                                                                                                                                          |          | TITLE                                       | SCALE         |
| DE APPR.                                                                                                                                                                                                                          |          | 412 FLOAT SKIDTUBE                          | NTS           |
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2016-04-28





**D3391-015 AFT TUBE ASSEMBLY PARTS LIST**

| QTY | PART NUMBER   | DESCRIPTION         |
|-----|---------------|---------------------|
| X   | D3391-015     | AFT TUBE ASSEMBLY   |
| 1   | D2646         | AFT CAP             |
| 1   | D3391-3       | AFT TUBE            |
| 14  | D3670-4200    | SPACER              |
| 2   | D3672-1       | WASHER              |
| 1   | D4095-049     | WEARPAD             |
| 1   | D4095-047     | WEARPAD             |
| 8   | AELS-1032-130 | INSERT              |
| 4   | AELS-1032-225 | INSERT              |
| 4   | ALS4-428-165  | INSERT              |
| 6   | AN3C4A        | BOLT                |
| 4   | AN3C5A        | BOLT                |
| 20  | MS20601AD4    | RIVET, BLIND        |
| 10  | MS21075L5     | NUT PLATE, FLOATING |
| 10  | NAS1149C0332R | WASHER              |

**NOTES:**

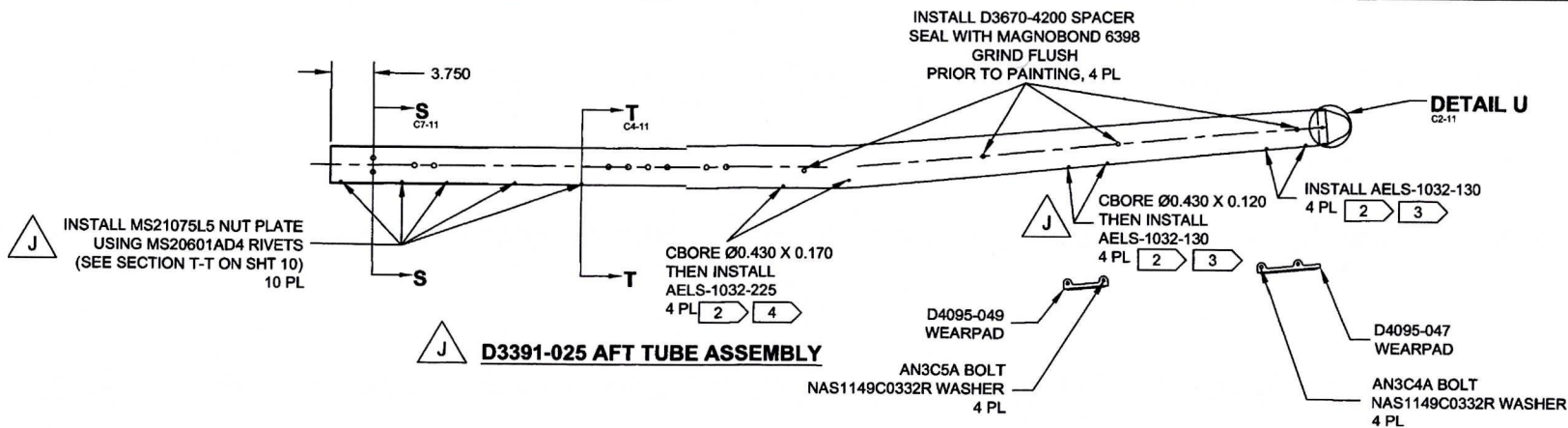
- 1) COAT ALL EXPOSED FASTENERS WITH LPS "LPS PROCYON"
- 2) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 AND Ø0.375 HOLES FOR WEARSHOE INSERTS AND NUTPLATES. C'BORE AS NOTED AND INSTALL INSERT/NUTPLATES EXCEPT WHERE INDICATED.
- 3) ENSURE WALL THICKNESS IS BETWEEN 0.070 AND 0.130 BEFORE INSTALLING INSERT
- 4) ENSURE WALL THICKNESS IS BETWEEN 0.130 AND 0.225 BEFORE INSTALLING INSERT

**BENDING AND DRILLING DETAIL**

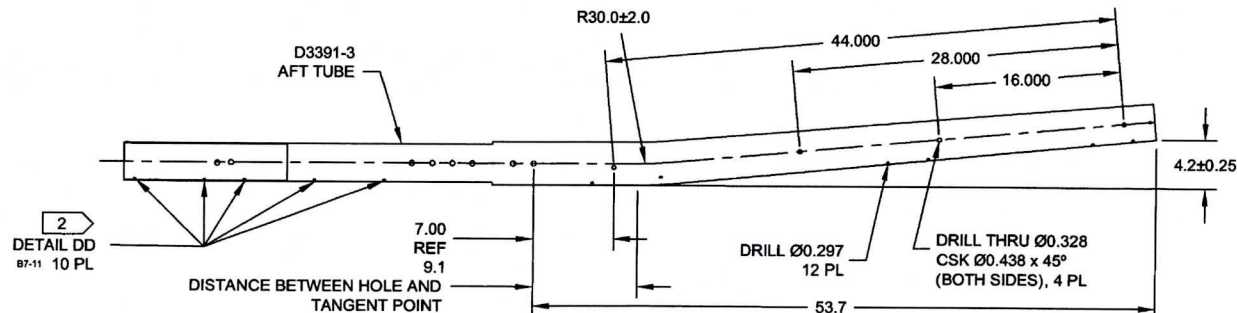
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|------------|----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| DESIGN     | PH       | <b>DART AEROSPACE USA, INC</b>                                                                                                                                                                                                                                                     |               |
| DRAWN      | ML       | EUGENE, OR                                                                                                                                                                                                                                                                         |               |
| CHECKED    | CP       | DRAWING NO.                                                                                                                                                                                                                                                                        | REV. J        |
| MFG. APPR. |          | D3391                                                                                                                                                                                                                                                                              | SHEET 8 OF 11 |
| APPROVED   |          | TITLE                                                                                                                                                                                                                                                                              | SCALE         |
| DE APPR.   |          | 412 FLOAT SKIDTUBE                                                                                                                                                                                                                                                                 | NTS           |
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**D3391-025 AFT TUBE ASSEMBLY**



**BENDING AND DRILLING DETAIL**

**D3391-025 AFT TUBE ASSEMBLY PARTS LIST**

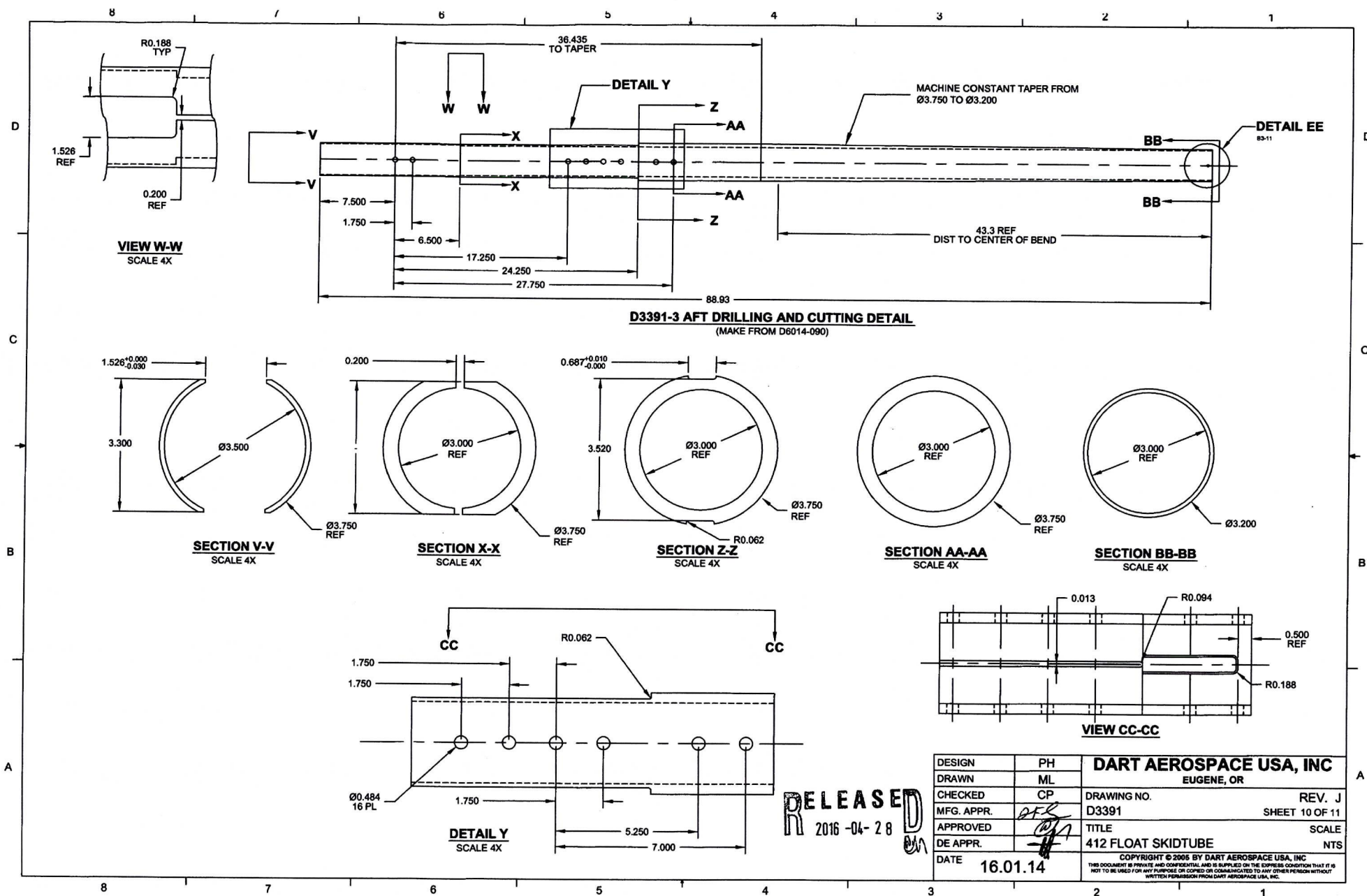
| QTY | PART NUMBER   | DESCRIPTION        |
|-----|---------------|--------------------|
| X   | D3391-025     | AFT TUBE ASSEMBLY  |
| 1   | D2648         | AFT CAP            |
| 1   | D3391-3       | AFT TUBE           |
| 4   | D3670-4200    | SPACER             |
| 2   | D3672-1       | WASHER             |
| 1   | D4095-049     | WEARPAD            |
| 1   | D4095-047     | WEARPAD            |
| 8   | AELS-1032-130 | INSERT             |
| 4   | AELS-1032-225 | INSERT             |
| 6   | AN3C4A        | BOLT               |
| 4   | AN3C5A        | BOLT               |
| 20  | MS20601AD4    | RIVET, BLIND       |
| 10  | MS21075L5     | NUT PLATE FLOATING |
| 10  | NAS1149C0332R | WASHER             |

**NOTES:**

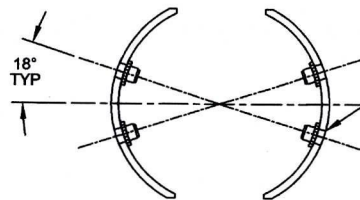
- 1) COAT ALL EXPOSED FASTENERS WITH LPS "LPS PROCYON"
- 2) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 AND Ø0.375 HOLES FOR WEARSHOE INSERTS AND NUTPLATES. C'BORE AS NOTED AND INSTALL INSERT/NUTPLATES EXCEPT WHERE INDICATED. USE NUT PLATE DRILL JIG IF REQUIRED.
- 3) ENSURE WALL THICKNESS IS BETWEEN 0.070 AND 0.130 BEFORE INSTALLING INSERT
- 4) ENSURE WALL THICKNESS IS BETWEEN 0.130 AND 0.225 BEFORE INSTALLING INSERT

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|            |          |                                                                                                                                                                                                                                                                                    |               |
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| DESIGN     | PH       | <b>DART AEROSPACE USA, INC</b>                                                                                                                                                                                                                                                     |               |
| DRAWN      | ML       | EUGENE, OR                                                                                                                                                                                                                                                                         |               |
| CHECKED    | CP       | DRAWING NO.                                                                                                                                                                                                                                                                        | REV. J        |
| MFG. APPR. |          | D3391                                                                                                                                                                                                                                                                              | SHEET 9 OF 11 |
| APPROVED   |          | TITLE                                                                                                                                                                                                                                                                              | SCALE         |
| DE APPR.   |          | AFT TUBE ASSEMBLY                                                                                                                                                                                                                                                                  | NTS           |
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|------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| DESIGN     | PH                 | <b>DART AEROSPACE USA, INC</b>                                                                                                                                                                                                                                                                     |                |
| DRAWN      | ML                 | EUGENE, OR                                                                                                                                                                                                                                                                                         |                |
| CHECKED    | CP                 | DRAWING NO.                                                                                                                                                                                                                                                                                        | REV. J         |
| MFG. APPR. | <i>[Signature]</i> | D3391                                                                                                                                                                                                                                                                                              | SHEET 10 OF 11 |
| APPROVED   | <i>[Signature]</i> | TITLE                                                                                                                                                                                                                                                                                              | SCALE          |
| DE APPR.   | <i>[Signature]</i> | 412 FLOAT SKIDTUBE                                                                                                                                                                                                                                                                                 | NTS            |
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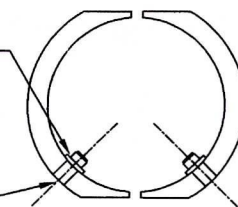


**SECTION S-S**  
D6-8,9  
SCALE 5X

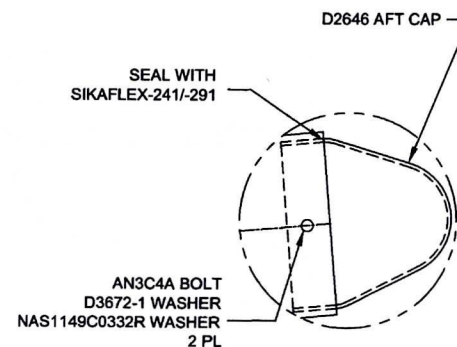
DRILL Ø0.391  
CBORE Ø0.516 X 0.040 DEEP  
INSTALL ALS4-428-165 INSERT  
4 PL

USE DT8217 DRILL TEMPLATE  
TO LOCATE HOLES AND OPEN  
TO Ø0.375

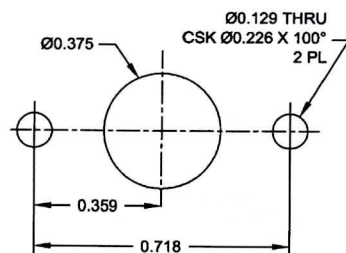
MS21075L5 NUTPLATE  
REF



**SECTION T-T**  
D6-8,9  
SCALE 5X  
5 PL



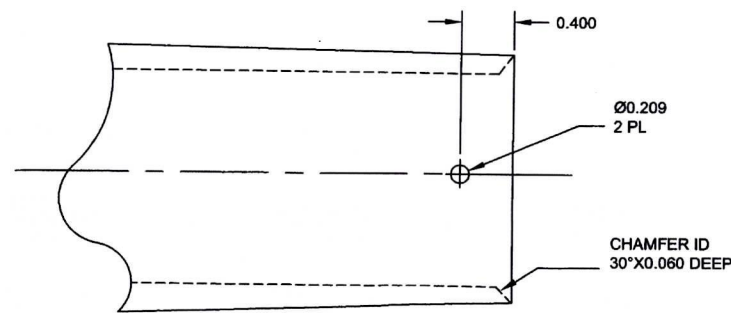
**DETAIL U**  
D1-8,9  
SCALE 5X



**DRILLING DETAIL DD**  
SCALE 10X  
B7-8,9



1



**DETAIL EE**  
SCALE 2X  
D1-11



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2016-04-28

**NOTES:**  
1) USE INDUSTRY STANDARD NUT PLATE DRILL JIG IF REQUIRED.

|                                                                                                                                                                                                                                    |                                                                                       |                                             |                |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------|----------------|
| DESIGN                                                                                                                                                                                                                             | PH                                                                                    | <b>DART AEROSPACE USA, INC</b>              |                |
| DRAWN                                                                                                                                                                                                                              | ML                                                                                    | EUGENE, OR                                  |                |
| CHECKED                                                                                                                                                                                                                            | CP                                                                                    | DRAWING NO.                                 | REV. J         |
| MFG. APPR.                                                                                                                                                                                                                         |  | D3391                                       | SHEET 11 OF 11 |
| APPROVED                                                                                                                                                                                                                           |  | TITLE                                       | SCALE          |
| DE APPR.                                                                                                                                                                                                                           |  | AFT TUBE ASSEMBLY                           | NTS            |
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